Adjusting the rangefinder

Sheets 12 to 15

Setting instruments, spanners, and tools

1.	Screw driver, 1 mm. dia.	
2.	Screw driver, 1.8 mm dia.	
3.	Screw driver, 2.2 mm dia.	
4.	Screw driver, 2.8 mm dia.	
5.	Graticule housing only for 10 metre setting	103.25.2
6.	Graticule 10 metre setting	103.25.16
7.	Guide roller	42 216 Z 1 A12
8.	Collit	42 216 U 307 W3
9.	Fousing mount	42 216 U 307 W4
10.	Spanner	42 216 U 575 W3
11.	Tabele stand	42-253.01 Z1 W7
12.	Camera holder with Telescope bracket	42-253.01 Z1 W9
13.	Graticule housing for 1 metre setting	42-253.01 Z1 W6
14.	Bending tool	42-253.01 U700 W2
15.	Distance setting gauge	42-700.01 Z1 A63
16.	Housing	42-700.01 Z1 W8
17.	Plate	42-700.01 Z1 W18
18.	Graticule 1 metre setting	42-700.01 Z1 W20
19.	Special screw driver	42-700.01 U478 W1
20.	Collit	42-700.01 U713 W4

Note: Cover plate, housing, and finder unit are removed (see sheets 1 to 6).

Sequence of operations

Place the finder unit on the main body, making sure that the finder unit is positioned parallel to the front edge of the main body without protruding in front of it. Screw the finder unit to the main body with the screws 15-10.170-5, 15-10.170-23 and 15-10.174-12, using the 2.8 mm dia. screw driver (see fig. 8.1).

Screw the distance setting gauge 42-700.01 Z1 A6 on to the mounting ring, insert both in housing 42-700.01 Z1 W8, and place this assembly on the camera holder. The field frame on the graticule 42-700.01 Z1 W20 of the 1 m graticule housing 42-253.01 Z1 W63 is to be precisely aligned on the groundglass screen with the viewfinder window of the camera. For this purpose the camera holder can be adjusted vertically and laterally with two knurled screws on the right.

Parallax compensation

The 90 mm mark of the viewfinder and the 90 mm mark of the graticule must be in register in the viewfinder eyelens. When the distance setting gauge is moved towards infinity the 90 mm mark must move towards the field frame on the graticule. At the infinity setting divergences of half-line thickness between the graticule field frame and the viewfinder frame are permissible. If a horizontal correction is necessary, readjust screw 15-10.126-6 on the parallax lever 42-700.01-493 with screwdriver 1 diam. For vertical correction, unscrew three screws 15-10.140-13 on the cover; remove cover.

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Continued from sheet 12

Unscrew two screws 15-10.142-8 on the setting plate 42-700.01-555 through one turn with screwdriver 1.8 diam. Adjust the setting plate laterally until the viewfinder field frame coincides with the graticule. Actuate the setting lever vigorously, check whether any changes occur. Adjust if necessary. Replace and screw down cover.
Instal the shutter in the housing (see sheets 4.1 and 5.1). Carry out zero setting (see sheet 7.1).
Screw the distance setting gauge 42-700.01 Z1 A6 on the camera. Place the camera holder 42-253.01 Z1 W9.

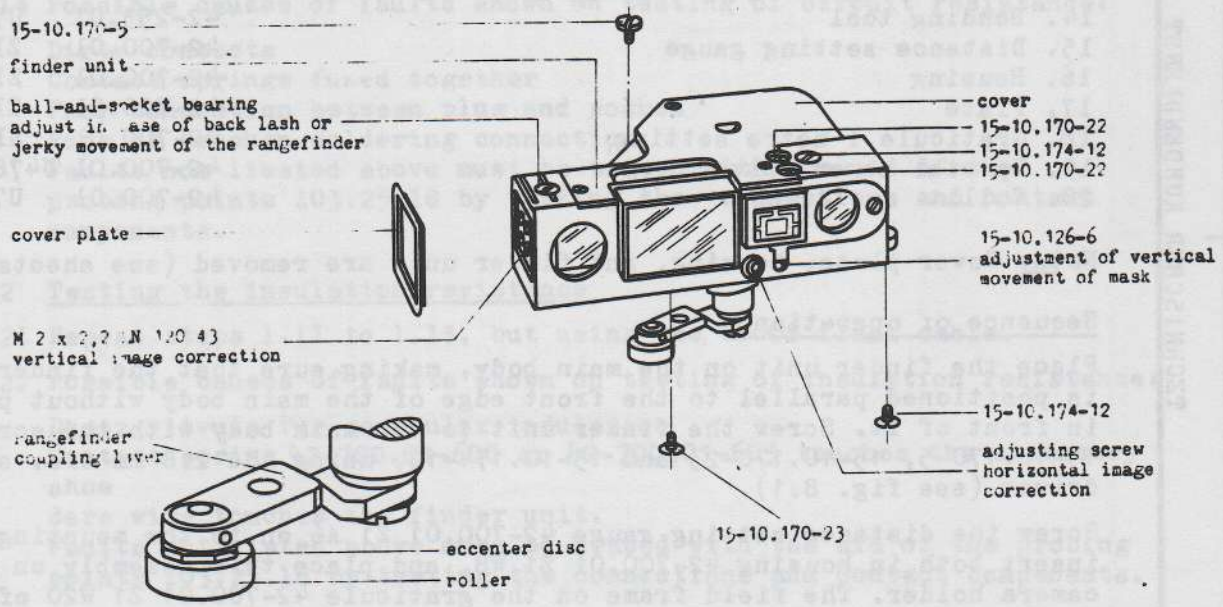

Fig. 8.1

Vertical error correction

Align the viewfinder frame with the field frame of the graticule with two knurled screws (see sheet 12.1).
Check the measuring level with the front attachment telescope on the 10 m graticule. The two horizontal lines must be in approximate register; divergences of up to line thickness can be eliminated later by rotating the mount of the glass wedge.

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Adjusting the rangefinder

Continued from sheets 12 and 13

If adjustment is not possible with the screws provided for the purpose the reflector cage must be taken out. Unscrew two screws 15-10.170-22 and one screw 15-10.174-12 with screwdriver 2.2 diam., take out the reflector case. If the movable image is too high, file off frome the direction of the long side of the reflector cage (see Fig. 9.1); if it is too low, file off from the direction of the short side of the reflector cage.

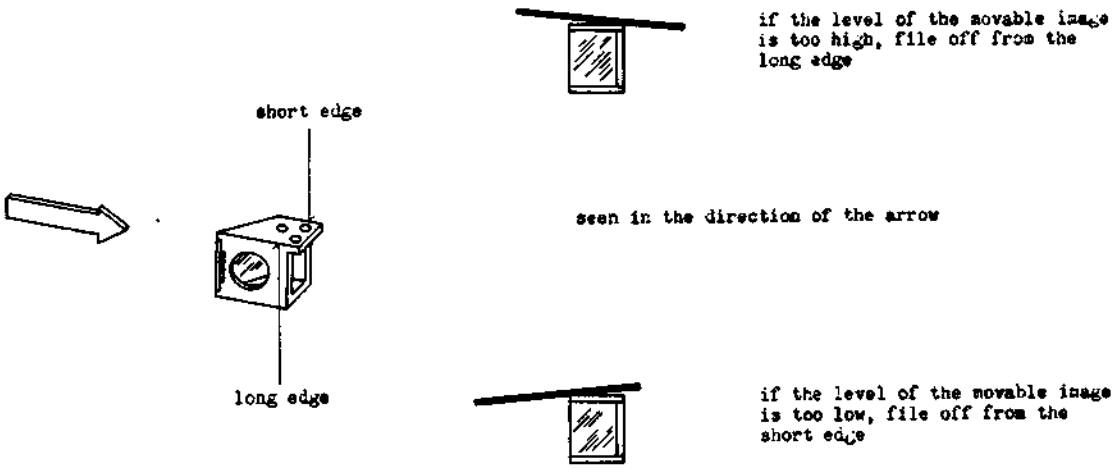
if the level of the movable image is too high, file off from the long edge
short edge
seen in the direction of the arrow
long edge
if the level of the movable image is too low, file off from the short edge

Fig. 9.1

Lateral error correction

Check the infinity position on the 10 m graticule with the viewing telescope. Corrections are carried out with the setting screw 42 216-288 by making the measuring images coincide, turning the setting screw to the left or right with the screwdriver 42-700.01-478 W1. Swivel the viewing telescope away from the rangefinder eyelens and set the distance setting gauge on 1 m. The crosslines of the 1 m graticule must precisely coincide; the thin lateral lines are used for sighting. Corrections are carried out by turning the eccentric disc to the right or left with tool 42 216-U575 W3 and screwdriver 42-700.01-478 W1 on the setting screw 42 216-288. The correction of the infinity and the 1 m setting is alternately repeated until the index marks coincide in both measuring positions.
Move the distance setting gauge from infinity to 10 m and from 2 m to 10 m. If play or „jumping" of the image occurs, adjust the ball mount with screw driver 2.8 diam. If the error cannot be corrected, take out the ball mount. Clean ball mount and ball, apply lubricant 460.

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Adjusting the rangefinder

Continued from sheets 12, 13, 14

The 10 m setting is established on two planes on the distance setting gauge. This makes the accurate control of the vertical position of the roller possible. If the setting gauge is turned from the left to the right stop at the 10 m mark, the measuring image of the Leica must remain unchanged in both settings. If a change does occur, the setting lever must be adjusted: insert the adjusting tool 42-253.01 U700 W2 into the bore of the setting lever and bend into the required position while controlling the vertical position of the setting lever with gauge 42 216 Z1 A12. Check the position of the roller with the distance setting gauge.

Pull the rangefinder coupling lever and let it recoil strongly, then check whether there is any change in the setting.

Check all the functions of the finder unit.

Seal all setting and fastening screws with protective lacquer.

Fit the cover and seal with protective lacquer.

Tighten the stop screw 15-10.140-20 for the eyepiece focusing lever with the 1.8 mm dia. screw driver.

With the cover plate in position a vertical error can be corrected by rotating the glass wedge mount 42 216-307 with the setting mount 42 216 U307 W4. Use tool 42 216 U307 W3 for mounting the glass wedge mount.

Carry out lateral error corrections on the setting screw 42 216-288 with screwdriver 42-700.01-478 W1.

Carry out corrections on the eccentric disc with the key 42 216 U575 W3.

To test the rangefinder on the fully assembled Leica, clip the plate 42-700.01 Z1 W18 on the back of the camera holder 42-253.01 Z1 W9.

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